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MONTANA OUTDOORS

Our Point of View

The early morning fog hung over Seeley Lake as I walked along the shore. A black bear ambled out from between two cabins and then around the next. A commotion erupted as dogs barked and branches broke. When I arrived, the bear perched nervously in a tree high above a dog kennel.

DONALD M. JONES

There it sat, edging higher all day as people stopped by to take a look. It eventually came down, confronting fences, dogs, people, and vehicles as it dashed through yards and across the highway.

Drawn in search of an easy meal, a half-dozen black bears had become a nuisance in this one small community. The problem repeated itself across western Montana a hundred or more times last summer and fall. Wardens and biologists were called at every hour of the day and night.

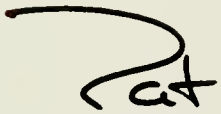
Our normal response is to relocate problem bears. Yet, despite being transported many miles away, they often return to the exact area in as long as it takes them to walk. So, too, they remember from year to year where an easy source of food exists.

The problem is more grave when it involves Montana's growing numbers of grizzly bears. Because of their aggressive nature, repeat offenders usually must be killed, as there are no longer zoos or other facilities to house them.

What is the solution? First is to take away the incentive. Lock up garbage, do not leave pet or other food unsecured, put electric fences around bee yards, and take other preventative action. Second is an exciting new approach that involves conditioning bears to fear human contact. Karelian bear dogs, once bred in Finland and Russia to hunt bears down, are now being used to save their lives (see page 24).

FWP staff are also called upon to address an array of problems that exist because some wild animal is doing something objectionable—a skunk under the porch, a woodpecker boring through the siding on a house, or a deer having supper on a new hedge. We now produce many brochures to help landowners cope in living with wildlife.

Some species seem to thrive in areas inhabited by people—skunks, beavers, and raccoons. Others, like deer, coyotes, and mountain lions, are simply doing what they did before we got here. A few commercial operations have opened to respond to problems caused by smaller critters (see page 13). For other animals, a combination of better informed homeowners and limiting the size of animal populations is the best response. Population control is accomplished through regulated trapping and hunting where permissible and possible, something that will become increasingly more difficult without landowner cooperation.



Patrick J. Graham, Director
Montana Fish, Wildlife & Parks

RICHARD MOUSEL

Beavers are flourishing, and so is Montana's fur trapping tradition (p. 13).

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by Bruce Auchly

LIKE LOOKOUTS PERCHED atop the mast of a nineteenth century sailing ship, mountain goats live on the barren crags of Montana's prairie mountain ranges, above the wheat fields, above the coulees, high in the clouds.

These prairie sentries are recent immigrants introduced by man. It's doubtful that mountain goats were indigenous to these geologically quarantined mountain ranges. They are native to the Rocky Mountain spine, but no fossil record has been found elsewhere. Lewis and Clark did not note any goats in the isolated prairie ranges; neither has any adventurer, trapper, or naturalist since.

From 1905 to 1980, mountain goats (*Oreamnos americanus*) were transplanted from Montana's existing herds to 21 new locations in 12 counties. Most of the transplant sites were east of the Continental Divide, including several of the state's prairie mountain ranges. The Crazy Mountains, Square Butte (just east of the Highwood Mountains), and the Snowy Mountains all received goats. These populations have enjoyed varying degrees of success. In the Crazies and Highwoods, where goat numbers are expanding today, hunting is permitted. In the Snowies south of Lewistown, where only a small population remains, hunting is not allowed.

RICHARD MOUSEL

louds

TIM CHRISTIE

Montana has 12 native mountain goat herds, all found on or west of the Continental Divide. It's unclear why the white rock climbers never moved into, say, the Little Belt Mountains, then north across the prairie to the Highwoods, or south to the Castles and into the Crazies. It is known that mountain goats are poor at pioneering new areas. "The lack of connec-

Square Butte (above), a volcanic formation near Geraldine, has a thriving herd of 60 to 70 mountain goats. Five nannies and two billies were transplanted there in 1971.

tivity among the island ranges with native goat habitat probably kept them from being colonized," says Jim Williams, Montana Fish, Wildlife & Parks (FWP) wildlife biologist in Great Falls.

Where native goat herds are found in isolated pockets—for example, the Mission Mountains west of the divide—it's theorized that glacial activity once connected the range to the mainstem of the Rockies, allowing the animals to move freely back and forth. In the ranges east of the divide, apparently that didn't happen, or the distances were too great.

Introduced goat herds, however, don't always act like their native counterparts. Goats transplanted 27 years ago onto Square Butte, a 5,735-foot volcanic formation near Geraldine, have multiplied and pioneered west across eight miles of open prairie into the Highwoods. Some of the animals have even been seen wandering eastward. "Farmers have seen them moving through grain fields east of Square Butte," says Williams.

The first mountain goat transplant at Square Butte, conducted in 1943, did not succeed. The original three females (nannies) and one male (billy) increased to 16 by 1957, when permit hunting began. The population dwindled and died out by 1966. Biologists had offered too many permits before the herd had a chance to grow. "We shot too many too soon after the original transplant," says Williams.

A second transplant of five nannies and two billies took place in 1971. Five years later, hunting began. With experience on their side, Williams' predecessors recommended fewer goat hunting permits at first.

When an animal like the mountain goat is introduced into a previously unoccupied area, the population goes through four stages: initial increase, initial stabilization, decline, and post-decline. Imagine a graph with a line curving upward to a plateau, then leveling off and eventually dropping precipitously to a lower level and flat-lining. The upward curving line is the initial increase. The plateau is initial stabilization. And so on.

The goal of wildlife biologists is to issue enough permits to keep the population from reaching the stabilization stage. Not so few that the population actually stabilizes, and not so many that the animals' reproduction can't compensate for hunting and natural mortality. The number of permits issued has to intersect that upward-reaching line every year just before it reaches the plateau.

In 1976, the FWP Commission allowed two permits at Square Butte, upped the count to three by 1979, and four by 1985. In 1986, 15 years after the second transplant, permit numbers were increased to nine. By that time the number of goats had jumped from the seven original animals to 54. Permit numbers rose to 15 in 1989 and stayed there until this year, when the commission lowered the number to 10 to reflect a somewhat lower population count in 1997. (The 1997 survey was flown in hot July weather, says Williams, and goats were resting in the shade and less visible from the air. The 1998 survey had not been flown as of press time.) Hunter success for the Square Butte herd averages 90 percent, and many of the male goats taken have made the Boone and Crockett Club record book.

The current population estimate is 60 to 70 goats on Square Butte, between 30 and 40 in the Highwood Mountains, and about a dozen on Round Butte, a small outcropping that lies between Square Butte and the Highwoods.

Mountain goats have a reputation for stubbornly refusing to seek out new territories, yet the Highwoods herd has done precisely the opposite. "Males will disperse if there are too many males and not enough females," Williams says.

Mountain goat transplants conducted in the 1940s by Montana Fish and Game Department employees greatly expanded the distribution of these big game animals in Montana. The photos here, taken in the Deep Creek area west of Choteau, show mountain goats being packed in crates and moved by mule-drawn, rubber-tired carts about five miles to waiting pick-up trucks. These goats were destined for the Crazy Mountains northwest of Big Timber. **Top photo:** *An unidentified worker with goats at the Deep Creek trap.* **Right:** *F&G's Ray Gibler with goats packed on a mule.* **Bottom left:** *A worker readies the rubber-tired cart.* **Bottom right:** *F&G biologist Bob Cooney atop cart at left, Ray Gibler at center. Photos courtesy of Jim McLucas.*

"Females will disperse if there is not enough food."

What makes the Highwoods herd unique, says Williams, who has studied the herd recently, is that they move across open prairie—up to 2.5 miles at a time—heading west from Square Butte to Round Butte to the Highwoods. They do, however, tend to travel from rock outcropping to rock outcropping on the prairie between the buttes, he adds.

Because the goat population in the Highwoods is growing, Williams recently recommended expanding the hunting opportunites. For the past 22 years, goat hunting has been restricted to Square Butte. This fall, for the first time, two either-sex mountain goat permits were issued for the Highwoods.

IN THE SNOWY MOUNTAINS south of Lewistown, where the goat population has barely hung on, the conventional reluctance of goats to cross open flatland seems to prevail. "There are some nice cliffs there," says Tom Stivers, FWP wildlife biologist in Lewistown, "but then you have to go three miles across a flat area to get to other cliffs."

Stivers believes other limiting factors may be at work as well: lack of wintering areas, poaching, and a limestone substrate, which may translate into fewer essential nutrients in the soil than in mountains formed from volcanic activity. The Highwoods and Crazies are volcanic.

The Snowies received 10 goats in August of 1953 and 20 more in July of 1954. Hunting seasons were held from 1974 to 1983, with three permits issued the first year and two permits each subsequent year. But the goat herd never blossomed, and hunting ceased. "There may be 10 to 15 goats," Stivers says. "There is reproduction, but I never see more than three or four goats at a time. They're hanging in there by a thread." Stivers adds that while he's not opposed to another goat transplant, it may prove fruitless: "The more I look at it, the more I think we're pushing the envelope."

The story in the Crazy Mountains mimics the Highwoods. The Crazies received 10 goats in 1941, followed by 11 more in 1943. "They really took off in the 1950s," says Tom Lemke, FWP wildlife biologist in Livingston. "We had an observed population of 342 in 1957, which at that time was one of the largest mountain goat populations in the lower 48 states."

But the numbers declined almost as rapidly in the 1960s. The low point came in the early 1970s when the population dropped to about two dozen. After hunting was stopped in 1976, goat numbers rose to about 50, and stayed there for nearly 15 years. Lemke is uncertain why the crash took place. "Hunting was liberal," he admits, "but I don't think the crash was due entirely to overharvesting."

Lemke has interviewed several old-timers who reported finding 20 to 30 goat carcasses in small areas. That would lead one to consider either disease or accidents, like avalanches. Lemke is unsure. Disease, perhaps; but avalanches probably wouldn't kill hundreds of goats over a few years. "Maybe the winter range was limiting and starvation played a role. The real reason may never be known," he adds.

Recovery took about 20 years. In 1976, biologists counted 35 goats in the Crazies. In 1990, the observable number was still only 60. During this decade, however, the population has soared to a counted sample of 154 goats and an actual population of 180 to 200. Lemke is more certain about the recovery than the crash, and why the comeback may have taken so long.

Juvenile goats face many obstacles in reaching adulthood: avoidi

Unlike deer, elk, and moose, goats don't reproduce as yearlings. Most nannies don't become sexually mature until they are 3-1/2 years old. "The prime age for nannies is 3-1/2 to 8-1/2," says Lemke. Not only do nannies have to reach sexual maturity, but they have to produce kids that survive and make it to adulthood. "They have to produce enough kids several years running to result in enough adult females to

allow the population to really take off, which may take a long time," he says.

Surviving to adulthood can be tough. Douglas Chadwick, in his book *A Beast the Color of Winter*, writes that "annual losses of between 40 and 60 percent of the kids in a herd are typical, and losses as high as 80 percent are not uncommon."

It's not much better for yearlings, which perish at a rate of 15 to nearly 50 percent depending on the severity of the winter, Chadwick reports. Juvenile goats face many obstacles to adulthood. They have to find food and survive while living year-round on sheer cliffs, avoiding avalanches and escaping predators.

Predators (bears, mountain lions, wolverines, golden eagles) do take some young goats, but the losses are probably not significant compared with those in the state's native western herds.

What *does* affect the island range goats, says Williams, is hunting and density. "The most difficult problem facing a wildlife manager is deciding which stage of the population cycle a particular introduced mountain goat population is in."

Since the second goat transplant in the mid-1970s, FWP wildlife biologists have made the right choices in the Highwoods. More recently, that seems to be the case in the Crazies, too, where limited hunting resumed in 1990. Fifty-

JEFFREY RICH

accidents, escaping predators, and finding enough food. Annual losses of the kids in a herd may total 60 percent or higher.

From his study in the Highwoods, however, Williams says introduced mountain goats in the island mountain ranges may have a better chance of survival. He cites four factors: Relatively mild winter conditions in the "chinook" zone of central Montana, year-round availability of food, terrain suitable for escape near those food sources, and vigorous growth of a population exploiting new resources.

The lack of an established predator base helps, too.

six goats have been harvested since 1990, while the observed population has increased from 60 to 154. "Hunting can be used in the Crazies," says Lemke, "to reduce the likelihood of another horrific population crash."

And at least in the Highwoods, that growing goat herd is colonizing new territory. From their crow's nest in the clouds, Montana's island range mountain goats have found a new shore and are sailing toward it. ■

FOREST SENTINELS

It's dawn in the whitebark pine forest. A hungry grizzly bear catches a whiff of elk on the June breeze. As the sow bear moves toward the scent with unexpected stealth, a scolding *tcherr! tcherr! tcherr!* cleaves the silence.

Unwittingly, this Yellowstone bear crossed into the territory of a red squirrel. The hunt ends with dull thuds of departing hooves. Overhead, the squirrel continues an angry banter, while rapidly flicking his tail. Such chatter translates to an unrelenting message—"no trespassing."

The pint-sized spoiler happens to be one of the most valuable members of the forest community to the grizzly bear. Red squirrels living in the high-elevation habitat of the whitebark pine clip and then cache cones for their winter pantry. Grizzlies, unable to harvest cones at the tops of the whitebarks, dig up caches each fall to feast on seeds that are high in oils the bear needs to fatten up for a long winter's nap.

Red squirrels are as easy to take for granted as the trees themselves. We listen to their barks, trills, and *tcherrrrs* on almost every hike. We might pause to admire a dizzying chase as two squirrels circle around a tree trunk, then launch

WATCHABLE WILDLIFE

by DEBORAH RICHIE

Below and Right: *In summer, the red squirrel's fur is more olive brown than red, with a black flank strip visible. In winter its pelage is brighter red.* **Opposite page:** *Other squirrels in Montana include the nocturnal flying squirrel (left), and the introduced fox and gray squirrels (center and right, respectively).*

JIM HEUSTESS

JOHN R. FORD

themselves recklessly toward nearby branches. What appears to be play is actually a display of fierce territoriality that's the hallmark of *Tamiasciurus hudsonicus*, known commonly as the red squirrel or pine squirrel.

From the northern edge of Alaska to New England and throughout the Rocky Mountains, this lively tree dweller graces the boreal forest with its incessant chorus, brave leaps, and middens of cones. In Montana, red squirrels inhabit the forests of western, central, and southeast regions. They reach highest numbers in mixed stands of ponderosa pine and Douglas-fir, as well as in subalpine fir and Engelmann spruce forests.

Three other kinds of tree squirrels can call Montana home—the nocturnal flying squirrel and the introduced fox and gray squirrels. Gray squirrels were released in Great Falls, Harlowton, and Miles City in the 1960s and thrived through the 1980s. No one has formally documented the gray squirrel's current status, according to Dr. Kerry Foresman, University of Montana professor specializing in small mammal studies. Fox squirrels inhabit the cottonwood bottomlands of the Missouri, Yellowstone, and Bighorn rivers, as well as the tree-lined streets of Missoula.

Don't confuse red squirrels with a similar species found throughout Washington, Oregon, and California. Douglas squirrels or chickarees (*Tamiasciurus douglasi*) are distinguished by gray-brown fur with yellow underbellies. In contrast, red squirrels sport reddish fur with white below. Both species molt twice a year. In summer, a black flank stripe is visible. Winter is the brighter of the two pelages. (In fact, the red squirrel fur in summer is more of an olive brown). The two species do not overlap ranges.

The red squirrel we know in Montana is by far the most audible and visible of our squirrel species. Mornings and evenings are the busiest hours. Work always stops at least momentarily when an intruder approaches. A staccato *chick-chick-chick* registers the alarm. When inside its territory, the call switches to a *tcherr-tcherr* as the upset squirrel stamps its feet and flicks its tail. Sometimes, the *tcherr* will end in a number of birdlike chirps.

Why all this fuss about territories? In one word—cones. Cones are gold to squirrels, and loudly defended. Their entire year revolves around the harvest. When cones are thick, the squirrel's adept harvesting skills are put to the test. Around August, cones high in the evergreens show telltale signs of swelling. Soon, the cone shower begins as the worker clambers about the upper branches, clipping off terminal twigs bearing cones. It may cut from 10 to 100 before descending to transport them one by one to the cache. A single, 600-foot-wide territory may contain 14,000 stored cones, as well as a smattering of dried mushrooms and other foods. A home range varies between about two and six acres, depending on the year's cone bounty.

A squirrel's cone midden becomes its compost heap. Just as we toss aside carrot tops, apple cores, and egg shells, so the red squirrel dines on cone seeds and chucks out the scales and cobs in an ever-growing pile beside its cache. Unlike compost, the cone shards do not speedily return to soil and the middens grow larger each year. Look for middens at the base of favorite perches, such as stumps or downed logs. The nearby caches of cones may be stuffed in a tree hollow, buried in damp earth, stored in underground chambers, or heaped at the base of a trunk, sometimes mounding up three feet and spilling over an area six feet in diameter. Each such cache is the autumn work of one hyperactive squirrel.

Red squirrels either pepper their territories with small cone caches, a technique called "scatterhoarding," or pile them into one great pantry, termed "larderhoarding." Some researchers have found a propensity for larderhoarding among squirrels in the West and scatterhoarding in the East.

However, Rebecca Burton, a graduate student at the University of Montana, reported in 1991 that the four squirrels she studied in Pattee Canyon near Missoula used at least 10 ponderosa pine cone caches apiece. She posed that the squirrels may have been trying to reduce the time spent storing cones to prevent them from opening

and spilling the precious seeds. There's a short window between ponderosa pine seeds ripening and the scales flipping outward to free some 75 seeds per cone. Tree species like the lodgepole pine bear *serotinous* cones, meaning it takes fire to release the seeds. In that case, there would be no rush for the forest harvesters to squirrel away lodgepole cones as quickly. Cone type just might be a factor in a squirrel's hoarding method.

If red squirrels are going to exert energy defending cone caches, it makes sense they would employ techniques for ensuring their food would not spoil. Just as we freeze, can, or dry our summer fruits and vegetables, red squirrels have come up with a technique of preserving their cones. They choose wet sites where constant moisture prevents cones from opening. Properly cached cones may have viable seeds for years. Squirrels can sniff out cones buried a foot below the ground.

Accessing cones in a Montana winter requires snow tunnels to connect caches. Squirrels press the snow against the walls, rather than pushing the snow out. They also may occupy underground tunnels beneath tree trunks and stumps where they line chambers with needles and store cones in passageways. On mild winter days, red squirrels venture above ground to nibble on the terminal buds of evergreens.

The summer diet of the red squirrel is impressively varied. Who would think that this bright-eyed, bushy-tailed creature had a carnivorous appetite? With such an active lifestyle, chasing and warning off intruders, it may not hurt to add a little protein from baby birds, eggs, or even young cottontails. One naturalist documented a brazen squirrel raiding an occupied saw-whet owl's nest for dead mice stored there. The red squirrel is undeniably an opportunist.

While cone caches are the most obvious endeavor, their flair for the gourmet might impress Julia Childs. They select mushrooms, cut them into neat slices, and arrange the delicacies on branches to dry before storing in hollow logs or trees. A word of warning—don't attempt to share in a squirrel's mushroom stores. Even the deadly *Amanita* is delicious in their book.

These creative gatherers have perfected at least one technique familiar to rural New Englanders. Naturalist Bernd Heinrich, known for his inquiring research on ravens and honeybees, discovered that red squirrels have been tapping sugar maples long before we were dousing our pancakes with that elixir. In the Maine woods, he observed that squirrels used their sharp incisors to pierce the sugar tree bark, just enough for the sap to run. They return a few hours or days later to lick the streaks of sap that have partially evaporated and thus concentrated the sugar. Montana lacks sugar maples, but perhaps they find sweet foods elsewhere. Squirrels need high-energy snacks to maintain a plucky lifestyle year-round.

Such bravado extends even to mating, which is a brief frenzied affair. Come February or March, the female lets down her guard just long enough for one or more males from neighboring territories to visit. After a fast chase of a courtship, she is ready to kick them out. Only the female provides parenting to the one to seven young she bears a couple of months later. That's not an easy task. Baby squirrels are born deaf, blind, and hairless in a leaf nest or hollow tree den. The latter is more common in Montana. Their eyes remain closed for the first month. By 38 days, the young are playing squirrel tag and wrestling within the safety of their den. The mother weans her young between seven and eight weeks. Finally, at 10 weeks the young are a third grown and ready to venture outside to test the midsummer forest. By 18 weeks, the juveniles are sent packing to stake out their own territories.

Those first two years of life are the most perilous. Amazingly, the bulk of squirrels elude most mammalian predators except the agile pine marten. Lynx, bobcat, and fisher prey on squirrels with lesser success. Long-tailed weasels will snag a squirrel on the ground if they're lucky. Goshawks and Cooper's hawks are built to maneuver fast through the woods and pose a definite danger. When a red squirrel sees a hawk, for once it falls silent and freezes on a branch.

Montana author Janine Benyus describes some marvelous adaptations to tree life in her book, *Northwoods Wildlife, A Watcher's Guide to Habitats*. Five strong, flexible toes grip tree limbs and twigs, even when racing at rates of 15 m.p.h. from branch to branch. That tail usually curled over its back will straighten out and serve as balance for ascending tree trunks, or a rudder in the air. Eyes are adapted to focus on vertical objects in order to properly judge leaping distance from

JAN L. WASSINK

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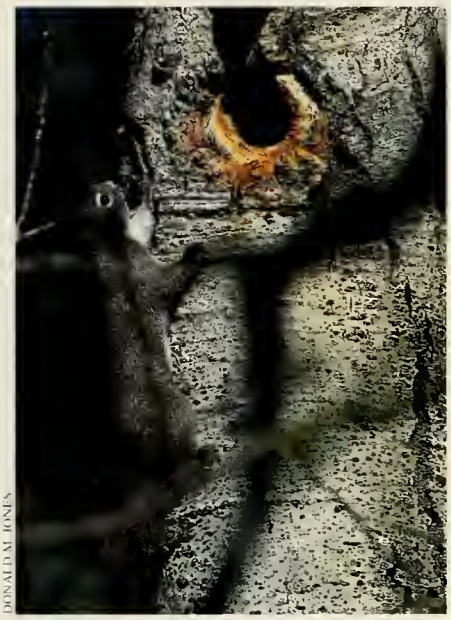
TOM J. ULRICH

Below: *Red squirrels often den in hollow trees.* **Bottom:** *At 10 weeks the young are a third grown and ready to make forays outside the nest.* **Right:** *A squirrel's "midden" consists of an ever-growing pile of cone scales and cobs adjacent to a cone cache.*



DONALD M. JONES

DIANE ENSIGN

RON SPAMER

tree to tree. Finally, special body hairs actually sense branches and twigs in the way of the agile leaper's progress. Without these hairs, we might see squirrels tangled up in branches, falling to the ground, and becoming hawk fast-food.

A.W.F. Banfield's 1974 book, *The Mammals of Canada*, adds to the list of marvels. Red squirrels can leap 10 feet between branches and have been known to topple 120 feet to the ground during a chase without injury. They've figured out how to maximize their body surface for a successful leap by extending their legs and flattening their bodies and tails. In a pinch, red squirrels show prowess in the water as well, swimming with head, shoulders, and tail held above the surface. Banfield writes that if a swimming red squirrel meets up with a canoe during a crossing, it may even climb up an offered paddle and take a rest.

Such remarkable adaptations in the harsh climate of the boreal forest seem every bit as wondrous as those of the rainforest spider monkey or chimpanzee. It's easy to overlook the spectacular in the common species just beyond our doorstep. Take quick stock of the red squirrel's cache of tricks and it adds up to one great midden. They can scold a grizzly bear, store 14,000 cones, dry gourmet mushrooms, raise young alone, elude most predators, "sense" where they are leaping, fall unharmed more than 100 feet from a tree, and swim across a lake. And that's just the beginning. Red squirrels likely play an integral and as yet undiscovered role in the forest's cycle of regeneration. My hunch is that there will always be a few secrets we'll never know about Montana's intrepid forest sentinels. ■

Modern trappers keep Montana's trapping heritage alive through ethics and education.

JOHN FRALEY

Call of the Wild

by JOHN FRALEY

RICHARD MOUSEL

Marten (top) and beaver (above) are two of nine classified furbearers sought by Montana trappers.

According to Brian Giddings, Montana Fish, Wildlife & Parks (FWP) furbearer coordinator in Helena, there are about 2,600 trapping licenses sold each year in Montana. Trappers pursue a variety of furbearers using foot-hold traps, conibear traps, snares, and box traps. Giddings says that Montana offers the most diverse trapping opportunities in the country, with good populations of nine classified furbearers including mink, marten, muskrat, otter, and wolverine, and a number of predators such as coyote, ermine, and raccoon.

Trapping remains a strong tradition in Montana. But increases in human population, loss of furbearer habitat, and more scrutiny by anti-trappers have posed challenges for trappers in recent decades.

Why do people trap? From the beginning, economics has played a major role. Native peoples used furbearers for clothing, food, and ceremonial purposes. Early Euroamerican explorers in North America viewed trapping as a way to make money, but were also drawn by a sense of freedom and adventure. Members of the Lewis and Clark Expedition, including Sacajawea, trapped furbearers on their journey. Lewis was proud of a coat given to him by Sacajawea that she made from dozens of ermine, or weasel, skins. Lewis and Clark allowed expedition members to trap beaver and otter for recreation and for trading stock along the way. Later, members of the expedition returned to the upper Missouri to trap, despite the relative wealth and leisure afforded them by land grants in the East.

Some of the famous members of the expedition, including John Colter, John Potts, Peter Wiser, and George Drouillard (Clark spelled his name "Drewyer"), couldn't stay away from the upper Missouri and returned to trap from 1808 to 1810 as part of the Manuel Lisa expedition. Potts met a gruesome death at the hands of the Blackfeet; Colter escaped death when he outran his pursuers and hid in a river logjam. In spite of the hostility of the Blackfeet, Colter returned to the headwaters to trap again; this time Droulliard and others were killed and dismembered. Surely, the upper Missouri country and its abundant furbearers lured these men as much as economics.

Today, trappers in Montana don't face these dangers, and most of them do not find it necessary to trap for economic reasons. But many of these men and women feel the same call of wildness and freedom that drew the early trappers to Montana.

Zona Kysar of Eureka became acquainted with trapping only a few years ago in her early 30s. Like many people who love nature, she found out that she was born to trap. "When the end of hunting season came, I always felt that things just came to a stop," she says. "Then a friend asked me to go along on his trapline." Kysar accompanied her friend on his seven-mile route high in the mountains. She waded through deep snow and helped him check a series of small conibear traps set in trees for marten, and several other larger sets for wolverine. She fell head over heels in love—for trapping, that is. "It was so beautiful and inspiring," she says, describing how the skies cleared as they snowshoed up the ridgelines. "I'm five feet seven inches, and when I took off my snowshoes I sank above my thighs in snow."

PHOTO COURTESY OF ZONA KYSAR

After accompanying a friend on a high-mountain trapping expedition, Zona Kysar went to town, bought some traps, and started her own trapline.

On that first trip the pair harvested five marten and a wolverine, a very fine catch. Seeing the dead animals in the traps didn't bother Kysar, an avid hunter. She was completely hooked. "It just seemed natural," she says. "He had outsmarted these incredible animals like people have been doing for thousands of years. The wolverine is just an awesome animal—it has a power the trapper can feel."

On the next trip, Kysar's friend let her reset some traps and build trap sets for marten. When they returned to the truck Kysar announced, "I'm going to town, buy some traps, and start my own trapline." Over the next week she pored over maps, studied elevation and topography, and planned her line. When the weekend came she snowshoed alone carrying her backpack stuffed with conibear traps, lure, bait, and other supplies. When she reached 7,000 feet she started making sets, building natural bough shelves at eye level in conifer trees. Over the next several months she reveled in the solitude and excitement of her trapline, eventually catching five marten. "I was thrilled," she says, "because I did it myself."

One of the most exciting aspects of Kysar's trapline was her cat-and-mouse interaction with mountain lions. At times, lions would spring her traps, seeking the bait and lure. Other times, lions followed her backtrail. "Once, I found lion prints following my tracks that I'd left that morning," she says. "It gave me an eerie feeling, spooked me a little. But I figured, he's here, I'm here, that's just the way it is."

Kysar has continued trapping and gained a variety of experience, now focusing more on coyotes and bobcats. She is thankful for experienced trappers who helped her learn. She takes great care in skinning her catch and caring for the hides, and is proud of the fact that full use is made of each animal she traps. "Everything I've trapped has gone into making something nice for someone," she says. She even added a pair of marten-fur ear muffs to her wardrobe.

Being a female in the mostly-male trapping fraternity hasn't bothered Kysar. "A few of my friends think I'm goofy, but most of them fish, hunt, or trap and they understand why I do it," she says. "Sometimes people are surprised when they come to my house and find me skinning a beaver or a marten, or working with baits or lures." Kysar's daughter, in fact, has not become interested in trapping. "She tolerates it but doesn't want to be involved, and that's okay."

For Kysar, it's the solitude and sense of independence that keep her hiking the ridgelines. "Once I was high up on the mountain and the sky cleared. I could hear the big snow puffs whoosh from the trees and hit the ground. The smell is so fresh, so cold, it gives me so much energy."

According to Tressa Schutter, a young woman who lives west of Marion, there are special challenges in being a female trapper. Most women, she says, support husbands who trap but don't participate much. Schutter, on the other hand, wants to see more women get involved as active trappers. "I think more women than men think trapping is cruel, but I believe that's just because they don't understand it. They don't realize the positive aspects as far as recreation, sense of accomplishment, and wildlife management."

Schutter says some women are discouraged from trapping because of the physical difficulty. That, she says, should not deter them from trying it. At a Montana Trapper's Association (MTA) rendezvous a few years ago, Schutter went around and recruited women to enter a trap-setting contest. She showed them how to use a special method to set traps. "Women can use a hand and finger technique against the knee in order to depress the trap spring," she says. "That way, not as much strength is required." At the rendezvous, her two younger sisters placed in the youth portion of the contest.

Schutter, who lives between Libby and Kalispell, was introduced to trapping by her father. She mostly traps coyotes, although she also enjoys trapping mink. Most of all

she enjoys learning about the animals she pursues.

On one coyote trapline, she checked her sets each day on the way home from work. After learning the coyotes' routes and food and water sources, she adjusted her sets and soon had four coyotes. "Either you learn about the animals or you don't catch them," she says. "You have to adapt and come up with new ideas. What works on one coyote may not work on the next."

Schutter says that the dollars earned on the trapline are the least of her rewards. "I like to interact with the animals and do my part to control an abundant predator. Ranchers are really positive about that aspect of trapping." Because she and her family have trapped responsibly for years, landowners often ask them to trap on their land. Some have muskrat or beaver problems, some just want to reduce coyote numbers.

Like many trappers, Schutter passes along her knowledge to youngsters. On some of her traplines she takes along her sisters, 11-year-old Eran and 13-year-old Amanda. Amanda skinned her first coyote last year. Says Amanda: "I got my first youth trapper license when I was 8 years old. That first year I caught two mink in one day—what a thrill!"

JOHN FRALEY

Tressa Schutter enjoys being outdoors and learning more about the animals she pursues.

Schutter's family is tolerant and comfortable with some aspects of nature that others might find unorthodox. "We wash our coyote hides in the washing machine," she says. "That way we get the best value from our catches and we can take pride in their quality."

Many women are brought up believing that trapping is not feminine, but that isn't true, says Schutter. "Women have a long tradition of trapping and putting up furs. And it's a natural thing, hands-on nature. If you just go to a grocery store and buy everything processed, you lose sight of where your food comes from—you lose connection with nature."

Kalispell resident Gary Wilson cares so much about trapping that he has given away thousands of dollars worth of traps to young people across the nation. Wilson, a rancher and owner of a trapping supply business, has been president of the Montana Trapper's Association (MTA) and a director of the National Trapper's Association (NTA). It was through these organizations that he began introducing youngsters to trapping.

At first, he gave traps to new junior members of MTA. Then he expanded the program to junior members of NTA for several years until the cost became too much to handle. Along with the traps, Wilson included a letter urging the young trapper to be responsible and be a good representative of the trapping community. "Most of the kids were stunned that someone would mail free traps to them," remembers Wilson. "But I considered it a small price to pay to help maintain a heritage we've had for centuries."

JOHN FRALEY

Gary Wilson, shown here with his son Andy, turned a trap-collecting hobby into a thriving trapping supply business.

And, as usual, generous giving brought priceless rewards. "I got letters from all over the country," he says. "You could tell the kids were writing from the heart when they thanked me. They'd send me pictures of animals they caught with the traps, usually mink, muskrat, skunks, or raccoons. For some of them, it was the only trap they were able to get."

Wilson started trapping when he was 6 years old. He trapped mostly muskrats with the help of his uncle and grandfather. He used the money he made on his trapline for Christmas presents.

He began his trapping supply business about 12 years ago. It started out as a hobby, collecting antique traps and other items. He kept buying more and more, then decided the only

way to deal with the mountain of traps was to start a supply store. He carries traps, fur-working supplies, and trapping lures in his small business on his ranch east of Kalispell.

Wilson has also been an active fur buyer. That, he says, is one of the hardest ways to make a living. "I don't know if there's anything more risky than being a fur buyer. So many factors, national and international, control the fur market." Nowadays, Wilson buys only enough furs for tanning and retail sales.

As a booster of trapping, Wilson sees a link among animal-use groups in North America. And he is sensitive to animal rights challenges. "I would like to see all ranchers, trappers, anglers, bird hunters, bowhunters, gun hunters, livestock owners, and others recognize that we are all connected. We have to work together to maintain our collective heritage. This spring we had PETA people here in downtown Kalispell dressed up like fish protesting fishing in Glacier Park. This should be a wake-up call for everyone who takes part in traditional outdoor recreation in Montana."

Like his father, 11-year-old Andy Wilson enjoys trapping and putting up fur. A few years ago, he received $36 for one exceptionally nice raccoon. "I like being out there with my dad," he says. "Trapping lets you see nature—the birds, the water. I learn about the animals when I trap."

Gary Wilson has for years been an active instructor in Montana's Trapper Education Program. It's not enough, he believes, to simply encourage youngsters to trap. He says that each one carries the responsibility of all trappers on his or her shoulders. "I always encourage older trappers to take kids along on their traplines, says Wilson. "That's really the best way for them to learn."

ADAM RAHMLOW

ADAM RAHMLOW

Fuller Laugeman, a long-time trapper and owner of Big Sky Lures, holds an award received for many years of service to the Montana Trappers Association.

Fuller Laugeman of Winnett makes his living producing a product that would make most people gag. His world-famous trapping lure business provides 35 varieties of scents to trappers from Norway to Alaska and across the lower 48 states. More than anything though, this 75-year-old expert is a trapper. It takes a trapper to know trapping lures.

Like many trappers, Laugeman started out as a youngster making sets for small furbearers and learning trapping skills the hard way. "When we moved to the Milk River country during the Depression my dad bought me a few traps to set for weasels," he says. "I caught a few, sold them for 35 cents apiece and thought I was in tall cotton."

Laugeman trapped off and on until the 1950s, then got serious. During the winter of 1959 he trapped 216 beaver. "We got between $7 and $15 for them, and that was when a dollar was a dollar," he remembers. He went on to trap extensively across Montana for years.

In the early 1970s, Laugeman's interest in trapping led him to purchase the respected Nelson's Lure business, based in Iowa. He changed the name to Big Sky Lures and brought the business to Winnett. He balanced the lure business with his work as a wildlife technician for the U.S. Fish and Wildlife Service.

From the beginning, his wife Ruth (who passed away in 1995) was a booster and supporter of the business, despite the obvious smell it entailed. They entered the business just as the fur market boomed, and "lure sales took off like gangbusters," recalls Laugeman. Ruth tolerated the unorthodox aspects of the business well and served in the wrapping and shipping end of things. She never said much to Laugeman about the smell. "What she did mind about trapping was when I would come into the house with fleas from the bobcats I was skinning," he chuckles.

A separate outbuilding houses Laugeman's famous lure operation. He ages the lure varieties made from secret formulas in glass gallon jars. Aging times range from four months to 11 years. "They just keep getting better, kind of like wine," he insists.

Laugeman has developed his reputation based on the success of his customers. "One of the most rewarding aspects of my business is when a trapper takes the time to send me a note or photos of the animals caught using my lures," he says. "I have a whole scrapbook full of those." In a business where many suppliers claim extraordinary results for their lures, Laugeman has been consistently successful for decades. "Your reputation rides on what goes into those bottles," he says.

Laugeman says he loves his business because it is an

opportunity to serve people, and to do something for the tradition of trapping. "Trapping should endure because it makes sense for wildlife management and it keeps people in tune with nature. Mother nature owns the trapper."

A man with an extensive background in fur trapping, Dave Wallace is affectionately known around northwestern Montana as the "Critter Ridder." Wallace, of Kila, operates one of the few registered and insured private wildlife control businesses in Montana.

Wallace points out that with urbanization and shrinking wildlife habitat, there is an increasing need for his services. "The wildlife damage control business has leaped out of its infancy in the last decade," he says, pointing out that it began in the eastern United States. He adds that there is now a four-year curriculum leading to a bachelor's degree in wildlife damage management at the University of Utah.

Many of the animals Wallace is called to remove are in residential areas, while some are on golf courses or in more rural areas. The most common species he deals with are the ones that thrive in habitats taken over by humans. These include skunks, beavers, muskrats, squirrels, raccoons, and coyotes.

It's hard to imagine a person with more knowledge about

JOHN FRALEY

"Critter Ridder" Dave Wallace's wildlife control business deals primarily with species that thrive in residential and suburban areas.

furbearing animals. But even he is stumped at times, and often must draw on all of his experience to solve a problem. Some species are more difficult than others. For instance, using a "tickling" technique, he's removed skunks from barns, hay bales, stairwells, commercial buildings, behind TV sets, under couches in the middle of the night, and so on. How does he do it without the obvious risk of touching off the skunk's most powerful weapon? "Trade secret," he says.

Public relations is an important aspect of his business. Wallace never uses firearms; he uses the technique with the least possible disturbance. He has noticed a striking difference in the way people view wildlife. "One neighbor could want the animal out, while another is more concerned with

Montana's Trapper Education Program

The Montana Trappers Association and Montana Fish, Wildlife & Parks (FWP) cooperate in conducting the Trapper Education Program across the state. In the classes, students participate in discussions of North American trapping history, how to avoid the capture of non-target animals, landowner relations, furbearer biology, responsible trapper behavior, and other subjects. Instructors demonstrate how to make sets for a number of furbearers and predators.

JOHN FRALEY

A volunteer instructor demonstrates the proper technique for skinning a muskrat.

The FWP-funded course is now in its fifth year and has certified about 500 students. MTA and FWP recommend that first-time as well as experienced trappers take the course to improve skills and learn about trapping ethics and responsibilities.

MTA president Ed Hebbe III says his association supports making the course mandatory for all first-time trappers. Hebbe notes that MTA members serve as volunteer instructors, donating their time because of their concern for the heritage of trapping.

How do you become an instructor in the Trapper Education Program? Contact any FWP office, or your local MTA representative. These folks can also provide dates for upcoming classes.

GARY KRAMER

JOHN LAMBING

DONALD M. JONES

Top: *Trapping helps keep predators like the red fox in check, improving waterfowl and upland bird survival.* **Above:** *Duck nests are especially hard hit by raccoons, skunks, and other furbearers.* **Right:** *The beaver's penchant for cutting trees can cause problems for property owners.*

the animal's welfare," he says. Wallace relates how one person held a nighttime vigil for a skunk he killed.

Even though wildlife damage trapping is an important business to him, Wallace always returns to his recreational trapping roots. "There is a legitimate need for what we do, commercially and recreationally," he says. Trapping keeps me fit and gives me an opportunity to be outdoors. I've been trapping for 40 years but I still learn more about the animals each time I go out. That's a constant."

An eastern Montana rancher and trapper, John Hughes is enthusiastic about the values of controlling predators and other wildlife through trapping. He began trapping as a boy to control beaver damage on the family ranch. Then, he got hooked. "Trapping is like a disease," he says. "Pretty soon you forget hunting and fishing, and just trap. It overwhelms you."

Hughes points to the excellent bird hunting on his and neighboring ranches, and believes trapping is mostly responsible for it. Hundreds of foxes and coyotes are trapped each year, reducing predation on pheasants. He also contends that predator control is essential to maintain big game populations. "Every coyote we kill adds to the deer and antelope population."

Hughes traps an incredible 250,000 acres each winter, and he also buys fur. He's a director of MTA and active in the national effort to formulate "best management practices" for trapping. He's about as involved in trapping as anyone.

Hughes likes to trap bobcats more than any other animal. "They are the marten of eastern Montana," he says. "They are elusive and scattered, and you have to trap a large area to do well. You must know the animal. Just like life, you never stop learning."

As a fur buyer, Hughes has had exceptional success. He has built contacts over a long period and has been able to weather price fluctuations. But he admits that a big part of it is the enjoyment, not the dollars. "I figure I'm the luckiest man in the world to be able to live where I live, ranch, trap, and buy fur," he says.

Although trapping is different now than in the past, common themes still resonate. Trapping is a form of recreation as well as a use of a renewable natural resource; it has economic value and it has spiritual value. For example, trapping and furbearers have shared an important place in the Koyokon culture of Alaska for thousands of years. All furbearers have importance and power, yet the Koyokons believe that the furbearers' spirits are not offended if trapping is done with respect, and if trapped animals are utilized properly.

What can Montanans do to help continue the heritage of trapping in our state? Modern trappers must practice the highest ethical standards in their trapping methods and in caring for the pelts of trapped animals. Trappers can teach others about trapping and consider becoming a trapper education instructor. Montana's trapper education class is in its infancy, but dedicated volunteer instructors are making a difference in the way students trap and how they view trapping.

A booster of the Trapper Education Program, John Hughes feels that young trappers now have much better opportunities to learn the right ways to trap and to respect the animals they harvest. He has enjoyed taking his young nephew, Jeffrey, along on the trapline. "We trapped a few muskrat and 'coon, and he was thrilled," says Hughes. "That's where it's at—if you don't show youngsters the value of what we do, we aren't going anywhere." ■

JOHN FRALEY

New Trapping Regulations

The Montana Fish, Wildlife & Parks Commission recently established the following new trapping regulations:

- Landowner permission—Resident trappers must obtain permission of the landowner, lessee, or their agent before trapping on private land. Nonresidents must obtain written permission from the landowner, lessee, or their agent before trapping or snaring predatory animals and nongame wildlife on private property.

It is unlawful to set snares on private property without landowner permission. Snares must be set in a manner and at a time so as not to duly endanger livestock. A trapper who injures livestock in a snare is liable for damage and this constitutes a misdemeanor.

- Right-of-way—Trapping is prohibited on the right-of-way of publicly maintained roads.
- Conibear ground sets—On public or private land, ground sets using 220 or 330 conibear traps must have the trap trigger recessed a minimum of seven inches within a secure enclosure that provides openings no greater than 50 square inches each.

Conibear setbacks—When using a body-gripping landset trap 220 or larger, a setback of 50 yards from the approximate centerline of public roads is required.

Free Trappers *by Charles M. Russell, oil, 1911. Courtesy of Montana Historical Society, Mackay Collection*

In the Footsteps of the Mountain Men

by Jim Williams and Greg Muich

Just east of Great Falls near the Highwood Mountains a light snow is falling as two trappers wade through water that almost reaches the top of their waders. Ice shelves have begun to form along the banks of the creek, a harbinger that winter's grip is strengthening.

One of the trappers is a young man, working the trapline for the first time. The other is his grandfather, passing on techniques learned two generations ago during the Depression when fur trapping was vital to his family's income. As they round a bend in the creek, the boy moves quickly toward two sticks that emerge from a deep pool. Their set has produced a large male beaver, one that will be rated as "blanket-sized" or maybe even "super-blanket."

MICHAEL & PATSY FRIBLEY

As they place their prized fur in the grandfather's old packbasket, they can't help but feel connected to a rich chapter of Montana's past. They are following in the footsteps of Native Americans, the Lewis and Clark Expedition, and the mountain men who trapped for the historic Hudson's Bay Company and the American Fur Company in the early nineteenth century.

In the fur-rich upper Missouri River region, John Jacob Astor's American Fur Company had more influence than the Hudson's Bay Company. In fact, three American Fur Company outposts on the Missouri River downstream from Great Falls served Montana throughout the early 1800s.

Fort Union, located at the confluence of the Missouri and Yellowstone rivers just east of the Montana border, was the grandest of the remote fur trading outposts. Steamboats from the lower Missouri River provided Fort Union with trade goods from St. Louis, then returned eastward with beaver pelts, furs, and buffalo hides. In addition to trappers and Native Americans, the fort hosted many famous travelers and artists. Distinguished guests like Father Pierre de Smet, artist George Catlin, and naturalist John James Audubon enjoyed formal dinners complete with butter, cheese, bread, beef, mutton, and chilled wines—rare luxuries on the western frontier.

Several hundred miles upriver, near the present-day town of Loma, Montana, the American Fur Company established Fort McKenzie, named for Fort Union's illustrious founder,

Scottish-born Kenneth McKenzie. Sometimes called the "Emperor of the Missouri," McKenzie was as sauve as he was ruthless in eliminating competition for the area's lucrative fur trade. Fort McKenzie operated on the upper Missouri for 11 years, from 1832 to 1842. This was dangerous territory for trappers due to the hostility of Native American tribes, particularly the Blackfeet. The Blackfeet, however, were accomplished beaver trappers and kept Fort McKenzie amply supplied with prime beaver pelts. A dispute over stolen livestock eventually resulted in Fort McKenzie being burned to the ground.

In 1847 the American Fur Company built a fort even farther upriver, about 30 miles downstream from present-day Great Falls. The new outpost, called Fort Lewis, was subsequently moved to a more desirable location a few miles downstream. Originally dubbed Fort Clay, the outpost was renamed Fort Benton in 1850 in honor of staunch supporter of the fur trade Senator Thomas Hart Benton. Now a beautiful historic town nestled against the Missouri River, Fort Benton was a hub of the early Montana fur trading era. Steamboats could not travel upriver past Fort Benton, so it became a prominent jumping-off point for trappers and explorers.

Montana's fur trapping tradition is still alive and well, with an active legion of trappers venturing out each winter to test their skills on some of the most secretive animals that inhabit our state. Some furbearers, like the beaver, have increased to the point where they are causing problems for property owners by felling ornamental trees or building dams that flood rural or suburban basements. Coyote populations, too, have increased in the last few decades, resulting in more livestock damage complaints and reduced deer numbers in some areas. Typically about 8,000 beaver and 10,000 coyotes are harvested by fur trappers in Montana each year.

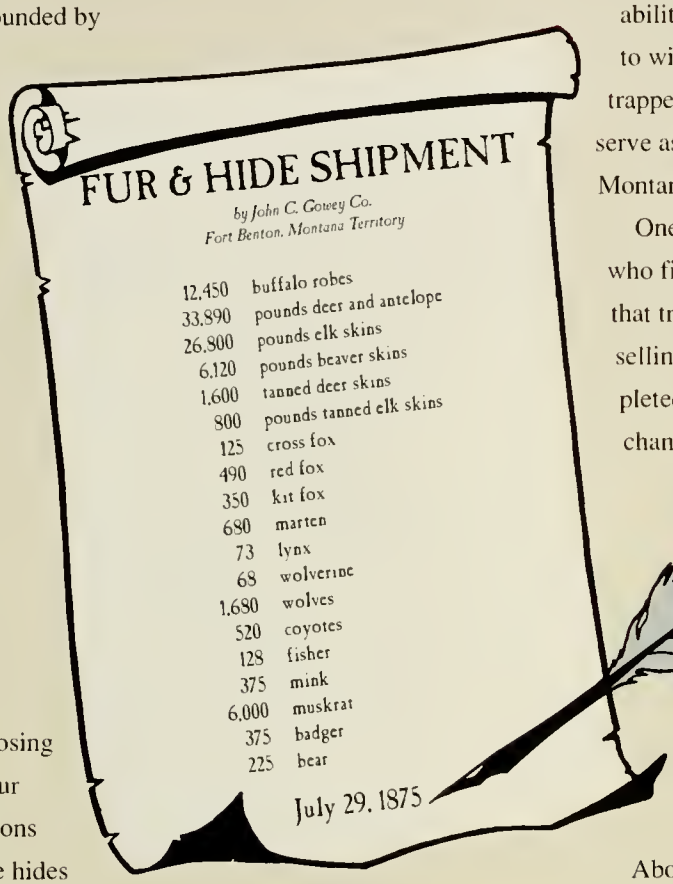
Montana fur is used for a host of products that are functional and aesthetically pleasing. Coyote and wolverine pelts are popular trim or "ruff" for parkas and other winter garments. Wolverine fur, especially, is prized for the ruffs of parkas worn in extremely cold temperatures because it sheds rime—frozen moisture from breath—like no other fur.

Beaver fur, the staple of early trappers, is still very popular today. Beaver is used not only in high-quality cowboy hats, but also as trim for a variety of winter coats and vests. Tanned beaver pelts, stretched on willow hoops sewn together with leather, are increasingly popular for decorative purposes. Muskrat pelts are used to make winter hats and mittens. Pine marten, mink, and bobcat fur makes fashionable garments that are often more durable than their synthetic counterparts. Unlike synthetics, which are typically petroleum based, fur is a renewable and abundant natural resource in Montana.

MONTANA HISTORICAL SOCIETY, HELENA

MONTANA HISTORICAL SOCIETY, HELENA

From the early 1800s to modern times, trappers have sold their bundles of pelts to a variety of outlets. One such outlet, a stone's throw from the Missouri River in Great Falls, is the Pacific Hide and Fur Depot (now called Pacific Steel and Recycling). Founded by German emigrant Joe Thiebes in the early 1920s, the depot has served as a trade center and gathering point for Montana trappers for most of this century. Although the fur depot will be temporarily closing this fall until fur market conditions improve, game hides and antlers will still be traded and tanned furs can still be purchased at Pacific. Today's more volatile fur market often serves to economically weaken a link to our romantic fur-trading past.



Don Judkins, a fur buyer at Pacific since 1978, has purchased furs from some of the same trappers every year for the past two decades. Others, he notes, choose to sell their pelts to independent buyers or at special fur auctions held across Montana. Many trappers pursue creative avenues in marketing their furs. The tanned fur business is popular today, says Judkins, with western motif stores and boutiques selling furs for crafts and home decorations. Some trappers sell furs to taxidermists, who in turn use their artistic abilities to create value-added products that can be sold to wildlife enthusiasts locally or nationally. Many trappers use pelts to decorate their own homes—and serve as a reminder of pleasant family times afield in Montana's winter landscape.

One difference between the trappers of today and those who first ventured into Big Sky Country, says Judkins, is that trappers used to spend up to two weeks trading or selling their furs, while today the process can be completed in a few hours. The reasons for trapping also have changed, he says. "In the 1970s there were still a few oldtimers around who earned most of their income from fur trapping, but nowadays people trap for a variety of reasons: to enjoy being outside in the winter, to revisit the past, and of course, for some extra income."

About 15 years ago Pacific, along with the Montana Trappers Association, initiated fur handling clinics to show trappers the art of properly caring for pelts. Quality and condition, says Judkins, determine the ultimate value of the fur. Furs are sorted and prepared locally and then shipped to larger clothing manufacturers. It is a volatile market subject to the whims of fashion and the garment industry.

What the future holds for trappers will be determined partly by the fur industry and perhaps partly by society's attitudes toward trapping. If there is a demand for fur products in the future, says Judkins, trappers and fur buyers will continue to fill the warehouses with pelts. And when December storms begin to drive most Montanans indoors, a group of rugged individuals will venture into the backcountry, as their predecessors have for 200 years, braving deep forests and cold rivers for one of Montana's most prized renewable resources, fur. ■

FAR LEFT: *Fort Union, the American Fur Company's greatest fur trading post, was established at the confluence of the Missouri and Yellowstone rivers in 1829.* LEFT: *Fort Benton, the end of the line for steamboats plying the upper Missouri River, was a bustling trade center when this photo was taken in 1879.*

TIM MANLEY

DONALD M JONES

bear BUSTERS

by CHRISTINE PAIGE

In the half-light the little grizzly's fur looks deep brown, its guard hairs silvered as though struck by moonlight. The bear—a 2-year-old male weighing just 180 pounds—was trapped close to a cabin in northwestern Montana, where it had been "rototilling" for the thick roots of seeded-in clover and nosing around home sites in search of food.

The "Partners in Life" team, Carrie Hunt and Angela Klinefelter, and Montana Fish, Wildlife & Parks (FWP) bear specialists Tim Manley and Erik Wenum, work in whispers around the drugged bear, quietly measuring foot pads and girth, gently taking blood and hair samples, then slipping on a radio collar designed to drop off within a year. When the grizzly wakes, rather than relocating him to the backcountry as is usual practice for "problem" bears, the team will release him at the conflict site and give him a lesson they hope will save his life.

As the trap door slips open and the young grizzly makes a break for the trees, an uproar suddenly cuts loose with people yelling, dogs barking, and firecracker shells exploding in the bear's wake. Rubber bullets and bean bag rounds sting the grizzly's fast-retreating rump, and the biologists give chase with a group of trained Karelian bear dogs, pursuing hot on the bear's tail, pushing it away from the cabin site. Once the bear dives into the cover of the forest the pursuit breaks off, allowing the bear to retire in peace.

As more people move into bear habitat, building homes on the fringes of wild lands and visiting parks and forests in ever-increasing numbers, bears and people inevitably come into conflict. And when the lives of bears and humans collide, bears ultimately lose. True omnivores, bears are lured to campgrounds and cabin sites for easy pickings: picnic coolers, garbage dumpsters, bird feeders, pet food, livestock feed, orchards, beehives, and even clover on rural lawns. Once conditioned to people's food and garbage, they return again and again, soon associating people with food. Food-conditioned bears not only threaten human safety, they can cause considerable property damage in their search for grub.

Wildlife managers have routinely removed problem bears—both blacks and grizzlies—to the backcountry in hopes they will return to natural foods. But on the whole, relocations have poor success. Dropped in unfamiliar territory, a bear may tangle with local bears and try to return to the security of its original home range, or it may key in on other homes or campgrounds in search of an easy meal. If a relocated bear gets into trouble again, it can mean a death sentence.

Now the Partners in Life program is developing an alternative to help wildlife agencies and parks cope with bear conflicts without destroying bears. The program's founder, biologist Carrie Hunt, has spent the last 20 years

A new program teaches "problem" bears better manners.

PHOTO COURTESY OF PARTNERS IN LIFE

From left to right: Partners in Life team members Carrie Hunt, Angela Klinefelter, Jeff Benkosky, and FWP's Tim Manley.

studying bear behavior and has devoted her career to helping people and bears coexist. Petite, good-humored, and inexhaustibly passionate about her subject, the 43-year-old Hunt uses her insights to develop "aversive conditioning" techniques—methods that deter bears from encounters with people without harming or killing the bruins.

As a University of Montana graduate student, Hunt conducted the original testing of pepper spray on bears to avert attacks. She also tested rubber bullets and firecracker shells as deterrents to be used on bears at conflict sites. More recently, Hunt recognized the promise of using a special breed of hunting dog, the Karelian, for aversive conditioning. Originally bred in Finland and Russia for hunting bear and moose, these black and white husky-like dogs are high-

Living with Bears

Any home next to Montana's forests or wildlands may be within bear country, and bears occasionally wander into towns and neighborhoods searching for food. Anything people or their pets eat will attract bears, and bears remember sources of food just as you might make a habit of a favorite restaurant. If you live in or near bear habitat, you can prevent "good" bears turning "bad" by eliminating tasty attractants around your home.

Garbage:

• Store garbage in bear-resistant garbage cans or dumpsters wherever available.

• If bear resistant containers are unavailable, store food-related garbage in a secure building that bears can't get into. Use outdoor cans only for non-food garbage.

• Store empty recyclables, such as pop cans, indoors—the sweet smells attract bears.

• Decrease odors by storing garbage in tightly tied, heavy-duty bags, and garbage cans with tight lids.

• Remove garbage regularly. Stockpiled garbage begins to smell and attracts bears.

• Store especially smelly garbage, such as meat scraps, in a freezer until they can be taken to a refuse site.

Around the yard:

• **Birdseed and hummingbird feeders:** Hang feeders 10 feet up and 4 feet out from the nearest trees and use a rope and pulley system to refill feeders. Or, minimize spillage by filling feeders only with as much food as the birds will use within a few hours and bring feeders in at night. Feed suet only during the winter when bears are hibernating. Store birdseed securely indoors.

• **Dog and cat food:** Feed pets inside. Store food inside, or in a secure garage or shed. If you must feed outdoors, sweep up any spilled food immediately and bring bowls in at night.

• **Barbeque grills:** After each use, clean and store in a secure shed or garage.

• **Fruit trees:** Collect ripe and fallen fruit immediately and do not allow fruit to rot on the ground. Do not leave fruit on trees through the fall.

• **Compost piles:** Limit compost to grass, leaves, and garden clippings, and turn piles regularly. Adding lime can reduce smells and aid decomposition. Do not add food scraps. Kitchen scraps can be composted indoors in a worm box with minimum odor and the finished compost can later be added to garden soil.

• **Gardens:** Avoid growing aromatic vegetables, fruits, and herbs. Harvest mature vegetables and fruits immediately. Locate gardens away from forests and shrubs that bears may use for security cover and travel. Do not use blood meal.

• **Landscaping:** Bears love lush lawns, and will "rototill" for clover and dandelion roots. Use native plant landscaping wherever possible, and do not seed in clover.

• **Beehives:** Honey and bee larvae are especially attractive to bears. If you keep hives, elevate them on bear-proof platforms

spirited and quick. The Karelians' drive and intelligence make them ideal working dogs, and Hunt is turning their instinct for tracking bears into an effective tool to teach bruins how to avoid conflicts with people.

After several years spent training the Karelians and establishing a breeding program, Hunt teamed with FWP biologists to test the dogs' effectiveness. Over the past three years, Hunt and her team have worked under contract with Yosemite and Glacier National Parks, the U.S. Forest Service, and FWP to further develop the Partners in Life program. The only program in the world to use Karelians for aversive conditioning, Partners in Life is seeing remarkable success.

Quick learners, bears are unlikely to return to places where they have gotten a rude and stinging reception. Usually two team members work together with three or four dogs. The yelling and barking attune the bear to the response it may get from any human encounter, and the rubber bullets and firecracker shells reinforce the message to leave the site. The Karelians add a persuasiveness other tools lack, giving the bear a scare for its life. To keep the risk to dogs and bears at a minimum, the handlers rarely release the dogs off-leash. But if they are off-leash, two to three Karelians can hold a bear at bay if it does turn, and the dogs are trained to return to their handler on command. In addition to their effectiveness for aversive conditioning, Hunt's Karelians can track individual bears, find things a bear got into and dragged off, sniff out vehicle-hit bears, locate orphan cubs, and warn if a bear is still nearby.

Aversive conditioning methods operate within bears' natural understanding of hierarchy in bear society. Bears don't defend set territories, but instead maintain a personal space that moves with them on their seasonal wanderings for food. Dominant bears move as they please, and subordinate bears work around them.

"We want to make it clear to the bear that it has options, and teach it that the best option is to walk away from people and their things," Hunt explains. "Bears have evolved with personal space and dominance. They have social hierarchies where they have initial contact and aggression over who's the big bear and where the big bear wants to be. Past that there's quite a bit of tolerance and avoidance that goes on, so they very naturally understand the kind of lesson we give them—that people are the dominant 'bear' around."

The team is careful not to corner or harass a bear. If the Karelians tree or bay up a bear, the dogs are called off to give the bear an opportunity to retreat. Hunt stresses that they always want to give the bear an open escape route.

"You could get into a situation where you've created a more angry, hassled bear if you harassed them," Hunt says. "An example of improper conditioning is if a bear were in a tree or a trap and it was pelted with rubber bullets or pepper spray to teach it a fear of people. We don't want to teach fear of people. I want a bear to know it has the option of leaving and that's the best option, versus teaching it that it has no control, no options, no choices. For grizzlies that's very important. You don't want a grizzly to feel cornered—that's when a grizzly turns and fights."

In 1997, Hunt and her colleagues worked 41 black bears and 19 grizzles, conditioning many of the bears to avoid sites where people live, work, and play, including rural homes and towns in the Flathead area, forest trailheads, and backcountry camps in the Bob Marshall Wilderness. In Glacier National Park, bears habituated to feeding along roadsides are a problem because they appear docile around people and cars, tempting visitors to approach too

DONALD M. JONES

Homeowners who allow a bear to become food-conditioned unwittingly place it in jeopardy.

(an overhanging platform on 10-foot metal poles that bears can't climb), and wire hives together with metal strapping. Or surround the hives with electric fencing.

• **Electric fencing:** Electric fencing may be the most effective way to discourage bears from taking advantage of gardens, orchards, compost piles, and beehives. FWP's Mike Madel suggests that an inexpensive 4-foot-high, seven-strand, alternating hot-ground electric fence with a standard charger of 6,500 to 9,000 volts and greater than 0.6 joules is best for bears. The key is the joule rating rather than higher voltage to give it the right zap.

• **Wild game:** Never leave gut piles in your yard or near dwellings—dispose of them in a remote spot. Butcher the game as soon as possible, and do not leave it in a shed. If it must be hung, then quarter it and hang it at least 10 feet off the ground and 4 feet from the nearest tree. Alaskan-style meat caches must be truly bear-proof and built on metal poles bears can't climb. Dispose of meat scraps, hides, and heads immediately.

closely or toss food to them. The bear dog team conditioned 13 bears that habitually fed during spring along a popular park road to move off into cover as cars approached. None of these bears subsequently ventured into nearby campgrounds during the summer, as had been their habit. The team also worked with a grizzly that frequented the Logan Pass area and began teaching it to avoid the popular Logan Pass boardwalk whenever people were present.

Because bears do not observe ownership boundaries, it has been important to the program that FWP, Glacier National Park, and the U.S. Forest Service cooperate closely. For example, the bear dog team worked a food-conditioned female grizzly in the North Fork of the Flathead that habitually moved between Glacier Park, the Flathead Forest, and the Polebridge vicinity. Trapped and radio-collared near a dog kennel where she was trying to reach dog food, the bear was released on-site and pushed away with the Karelians. The team soon found her heading toward another cabin with an Alaskan-style cache of game meat. After they intercepted her at the cache and again used the dogs to push her away, she seemed to give up on cabin sites. She eventually moved into the park to den for the winter.

With each new situation, the Partners in Life team adds to its understanding of which bears are better candidates for aversive conditioning and how to tailor their methods to the age and personality traits of each bear. Some situations and some bears require only one encounter with the bear dog team, others a stronger and repeated message over several days or weeks, or from one season to the next. Bears are persistent where food is involved, and Hunt emphasizes it is important to monitor bears and reinforce conditioning, in particular to help female bears teach "good" habits to the next generation. Food-raiding and dumpster-diving habits are passed from sow bears to their cubs, and destroying "problem" mother bears increases the likelihood that orphaned cubs will look for easy pickings and collide with people. In Hunt's opinion, sows that learn to avoid people and human sources of food are also likely to teach that behavior to their cubs, and she puts a high priority on conditioning female bears in hopes of providing a legacy of good behavior from one generation to the next.

Most of the bears the team worked in 1997 caused no further problems up to the time they denned for the winter, and Manley says results exceeded their expectations. Hunt is excited by their success. "We're not having repeat problems with the on-site releases—in Montana in 1997 we had 100 percent success," she says. "That's *huge*!"

Glacier Park biologist Steve Gniadek was also pleased with the results in 1997 and foresees creative changes to the park's bear management policies. "This program is on the cutting edge of bear management," says Gniadek. "1997 was the first year we didn't trap, relocate, or kill a bear in the park. Although early and anecdotal, it's evidence the program can be a success."

In 1998, a poor huckleberry crop and scarcity of other bear foods in western Montana forced bears to travel widely in search of food. Conflicts throughout western Montana increased dramatically with both black bears and grizzlies, especially bears that had become food-conditioned or familiar with people. Bear managers and the Partners in Life program found their resources stretched to the breaking point and, because the team could not tackle every bear conflict, the bear dog team's priority was placed on grizzly bears.

Manley, Hunt, and their colleagues began the 1998 season working in the western part of the park and the North Fork area outside the park, reinforcing work with individual bears begun in 1997. But tragic events in the park's southeast corner, where a grizzly bear family consumed (and had likely killed) a hiker, drew the team away to help capture the grizzlies before their other work was completed. Because the team was unable to continue work with one subadult grizzly, the bear was subsequently killed when it left the park and got into trouble. Throughout the rest of the summer, the team concentrated on the North Fork grizzlies and worked with locals to secure attractants.

In a year like 1998, it becomes sadly clear that not all bears can be saved. "We have no control over huckleberry production," says Gniadek. "There will aways be good berry years and bad berry years. But if we are to live responsibly in bear country we can minimize bear conflicts by controlling food attractants. Turning around a bear that has been purposely fed or received food or garbage through our negligence is a costly and labor-intensive process that will ultimately fail if we don't remove the attractant."

Because *people* are still the most important key to reducing bear conflicts by eliminating attractants in the first place, Manley and Hunt have made education a major part of the Partners in Life program. Despite 16-hour days monitoring bears and training dogs, the team takes every opportunity to teach proper food storage techniques to campground visitors and rural residents. Manley also gives classes and presentations in the Flathead area on living with bears and preventing bear problems. The Karelians themselves have become charismatic ambassadors for Partners in Life. "We can't win without the public understanding what we're doing and working to *prevent* problems," stresses Hunt.

Many rural residents enjoy watching bears and care deeply for their welfare, but are reluctant to call the state wildlife agency for fear the bear will be moved or destroyed. Bear biologists, however, feel there is a progression of behavior from habituation to food-conditioning. A homeowner who lets a bear get increasingly bolder over a period of time, then finally calls FWP when it tries to break into his cabin, has unwittingly put the bear in jeopardy. By this point, the bear is heavily food-conditioned, a threat to human safety, and very hard to turn around. The Partners in Life team would like residents to report bears to FWP immediately so biologists have an opportunity to work with the bear as early as possible, before it becomes

PHOTO COURTESY OF PARTNERS IN LIFE

Partners in Life founder Carrie Hunt with three of her Karelian bear dogs.

For more information, contact:

Partners in Life, Wind River Bear Institute, P.O. Box 307, Heber City, UT 84302; 801-654-6644; ursus@marsweb.com; or Grizzly Bear Management Specialist, Montana Fish, Wildlife & Parks, 490 North Meridian Rd., Kalispell, MT 59901.

Tax deductible contributions to help support the program in Montana can be made to:

Partners in Life
c/o Brown Bear Resources
222 North Higgins
Missoula, MT 59802

difficult to teach. "One of the worst things people can do is sit and watch a bear at close range," says Hunt, "because the bear will get comfortable around people and sooner or later get into trouble."

Partners in Life has been a labor of love for Hunt and her colleagues, and they have invested thousands of hours of volunteer time into developing their methods and training the Karelians. Hunt has worked on a shoestring for the last several years, investing all of her savings into getting the program up and running and supporting the program by matching private donations and grants with agency funding. Hunt's assistant, Angela Klinefelter, works as a volunteer intern for the benefit of the unique training and experience and hopes there might be a career in aversive conditioning programs. Another die-hard volunteer, Jeff Benkosky of Columbia Falls, devotes time to caring for and training the dogs when the team is in northwestern Montana, and constructs most of the program's dog harnesses and equipment. FWP grizzly bear management specialists Tim Manley and Mike Madel, and game damage liaison Erik Wenum, are now training their own Karelians for their day-to-day work.

Hunt and the partner agencies are struggling to fully fund the program and build it to its full potential. Aversive conditioning requires hours of labor by bear specialists and a year-round investment in training and maintaining the Karelians. Relocating bears may be simpler and cheaper, but the bears may ultimately pay with their lives. "Partners in Life is the only effort of its kind that teaches bears and people without changing bears' natural behavior," says Hunt. "The most important part of this program is that it offers an alternative to dealing with problem bears. When you have a problem bear, you don't always have to move it or destroy it. Up until now we haven't had this alternative."

The Partners in Life team would like to see the program grow to the point where state wildlife agencies and parks use aversive conditioning wherever there are problem bears—helping to save bears' lives in every park and forest. She hopes her Wind River Bear Institute, based in Heber City, Utah (the umbrella organization for both Partners in Life and Hunt's Karelian breeding program, Wind River Bear Dogs), will eventually be able to instruct wildlife managers across the country in aversive conditioning techniques and on training and handling Karelians.

"If we want to maintain populations of grizzly bears and black bears along with the increase of people and homes in bear habitat," says Hunt, "we can expect to have increasing conflicts. This program takes time, it takes manpower, and it takes money—but we end up with *live* bears." ■

TIM MULLIGAN NAMED NEW FWP COMMISSIONER

Governor Marc Racicot recently announced the appointment of Tim Mulligan of Whitehall to the Montana Fish, Wildlife & Parks Commission. Mulligan will fill the seat that has been vacant since Dale Tash of Dillon passed away in June.

Mulligan, now in private business in Whitehall, previously worked for nearly 20 years in corporate management for MSE, Inc., of Butte. He will represent the interests of southwestern Montanans on the five-member commission.

An active member of the Whitehall community and an avid, lifelong Montana sportsman, Mulligan, 44, holds degrees in zoology from Montana State University at Bozeman and in safety and health from Montana Tech in Butte.

Tim Mulligan

Mulligan, in filling the seat vacated due to the death of Tash, will serve a term ending January 1, 1999.

THE TRUE DEFINITION OF SUCCESS

Montana Fish, Wildlife & Parks employees at the Bonner Check Station just east of Missoula used to make a distinction between "successful" and "unsuccessful" hunters. Signs were placed at the approach to the check station, designed to sort hunters into two categories. One sign said, "Successful Hunters," with an arrow directing motorists to the right lane of traffic. The other sign said, "Unsuccessful Hunters," which directed motorists to the left lane.

A melting pot of psychoses was no doubt created at that point of no return—the point at which hunters labeled themselves as "successful" or "unsuccessful." One might imagine that

THE LAST OF A GENERATION

Until his death on May 22, 1998, John Cook was the oldest living Montana game warden. Born June 16, 1910, in Dickinson, North Dakota, John grew to respect the land and all its creatures. His love for the outdoors would lead him to protecting it as a Montana game warden for more than 28 years.

In 1932, while working as a machinist in Illinois, Cook met the most important person in his life, someone who would stand by his side for the next 66 years. On August 8, 1932, with a budget of $4, ($2 for the wedding and $2 for the honeymoon), he married Avis Waterman. John and Avis honeymooned on a freight train bound from Elgin, Illinois, to Sentinel Butte, North Dakota, where he planned to help relatives on a harvest crew. Several days and 1,500 miles later, the newlyweds arrived in Sentinel Butte with 90 cents to spare!

In 1938, John and Avis settled in Great Falls, Montana. While working for a sporting goods store, Cook was offered a job as a state game warden. He left his $25 a week job and pursued a career as a game warden for $125 a month.

Over the next 28 years, Cook spent time stationed in Great Falls, Red Lodge, Augusta, Shelby, Glendive, and Plentywood. Each duty station brought many fond memories. In 1940, while stationed in Shelby, John caught the state record brook trout (9.06 lbs.) in Lower Two Medicine Lake, a record that still stands 58 years later.

Cook's favorite and most memorable duty station was Plentywood. Its wide-open spaces and proximity to the majestic Missouri River made working there a pleasure. It was there that he met the Harmon family and became a friend for life. After retiring in 1966, he worked as a guide for Dean Harmon, a pioneer in the outfitting industry.

John was known throughout eastern Montana for his wood carvings, square dance calling, custom gun stocks, and storytelling. He will be missed by all.

John Cook with his state record brook trout in 1940.

His dedication, character, and love for the job made him a game warden's game warden, and truly the last of a generation.—*Lee Anderson, Game Warden, Plentywood*

those individuals with high self-esteem always steered unabashedly into the successful lane, and dared any impetuous check station attendant to challenge the choice. Others would be expected to bear dutifully to the left, always keenly aware of their inadequacies and perpetually repentant.

Of course, the lane most heavily traveled, but left undesignated by FWP, would be that for the "undecided." Its location was between the lanes for the "successful" and the "unsuccessful," the place where passengers and drivers argued passionately over the appropriate designation. Impromptu lane changes were frequent and emotionally charged. Nothing could match the adrenaline rush of idling in the undecided lane when the first set of backup lights came on, then flashed in panicked sequence through a line of 30 pickup trucks, like a "wave" of football fans at Washington-Grizzly Stadium.

Psychologists flourished and invested in choice real estate.

In retrospect, we recognize the good old days at the Bonner Check Station as an excellent example of government deregulation and laissez-faire public policy. For, despite the potentially disastrous consequences of allowing thousands of hunters to make individual lane choices of their own free will, they invariably made the choice that FWP wanted them to make. That is, hunters with harvested elk or deer moved slowly forward in the right-hand lane, where a crew of attendants gathered volumes of useful data from the animals taken and the hunters who had harvested them. Hunters without game moved forward more rapidly through the left lane, where they only needed to report limited information to a single attendant before driving on home. Hunters defined *themselves* as successful if they had harvested an elk or deer. Hunters defined *themselves* as unsuccessful if they had not.

One day, Bill Thomas couldn't take it anymore. Bill is FWP's Region 2 information officer in Missoula. Like most people in line at the Bonner Check Station, Bill knew the true definition of a successful hunter.

A successful hunter is someone who participates. If you want to qualify this further, you might add that a successful hunter acts knowledgeably and respectfully. He or she takes pride in using good judgment as opportunities arise, and reflects upon and learns from the poor choices so they may be transformed into experience and wisdom. Success has nothing to do with harvested game.

Nowadays, the signs at the Bonner Check Station direct "Hunters With Game" toward the right-hand lane, and other hunters toward the left. And, people seem a lot less frazzled when the attendants address them. Success, or lack thereof, is not mentioned.—*Mike Thompson, Wildlife Biologist, Region 2*

Randy Wuertz Receives Enforcement Award

Randy Wuertz, a Montana Fish, Wildlife & Parks game warden based in Gardiner, has been named the 1997 recipient of the prestigious Shikar-Safari Club International's Wildlife Officer of the Year award for Montana.

An 18-year veteran of FWP's Enforcement Division, Wuertz began his career with FWP in Billings in 1980, and was transferred to the warden position at Rosebud Battlefield near Decker in 1981. He moved to his current Gardiner assignment in 1987.

The Shikar-Safari award winner is selected by the director of FWP from among nominations submitted by warden captains in each of the agency's seven administrative regions. Award winners are selected on a basis of their professional relationship with hunters, anglers, and landowners in their districts, their performance of duty and dedication to the wildlife law enforcement profession, and their participation in activities outside of daily enforcement work.

Wuertz was recognized for his outstanding backcountry skills, his dealings with large corporate landowners, his involvement with late season elk hunts and endangered species, and his involvement in the center of the bison controversy. Wuertz was noted for his exceptional skill in working and training horses for work in the backcountry, and he has taught game wardens and other FWP employees his techniques.

Most recently, Wuertz helped a company with production of a pilot video on Montana game wardens that was sold to major television networks and will air nationwide in September.

RICH FURBER

FWP Game Warden Randy Wuertz (left) receives the 1997 Montana Wildlife Officer of the Year award from Shikar-Safari Club International's Hy Erickson.

"Randy Wuertz is an exemplary example of what a field game warden should be," said Warden Captain Jim Kropp of Bozeman. "We are fortunate to have such a dedicated wildlife professional working for our state." —*Bernie Kuntz, Region 3 (Bozeman) information officer*

1998 Montana Outdoors Index

The major items published in *Montana Outdoors* in 1998 are indexed below. Extra copies of '98 issues are available at $3.50 each (includes postage). The following back issues are available at the same price:

1971—all issues, except March/April
1972—all issue, except May/June
1973—all issues
1974—all issues
1975—all issues
1976—all issues
1977—all issues, including Special Yellowstone Issue
1978—all issues, including Special Parks Issue
1979—all issues
1980—all issues, including Special Hunting Issue
1981—1995 all issues
1996—all issues, except January/February and March/April
1997—all issues

To inquire about or order a back issue, write: Back Issues, *Montana Outdoors*, Montana Fish, Wildlife & Parks, 930 West Custer Avenue, Helena, MT 59620.

FISH/FISHING/WATER

Montana's Native Rainbows—Most of Montana's rainbow trout are descendents of fish brought from other places, but the Kootenai's redband trout are true natives (Joe E. Huston, March/April).

From the Field—Roy Hassinger: The Essence of Volunteerism—A Kalispell resident has taught hundreds of kids to fish (John Fraley, March/April).

Family Fishing Adventures—A new program geared toward kids is helping keep Montana's fishing tradition alive (Dave Hagengruber, May/June).

1997 Fish Records—All Fishes Great and Small—Montana anglers set five new fish records in 1997 (Dave Books, May/June).

From the Field—Sunnyslope Grayling Defy the Odds—An irrigation canal along the East Front hosts a self-sustaining population of Arctic grayling (Bruce Auchly, May/June).

Our Point of View—Schools, volunteer instructors, conservation organizations, and community groups are helping families get involved in fishing (Patrick J. Graham, May/June).

Perspectives—Partners—Fishing and friendship ease the loneliness for a widow and a new teacher in town (Dennice Scanlon, July/August).

From the Field—"Swamp-Out": A Tool for Restoring Westslope Cutthroat in Headwater Lakes—Planting pure-strain cutthroat for a number of years can effectively eliminate non-native populations (Joe Huston, July/August).

Perspectives—A River Dream—No dyed-in-the-wool trout angler should miss the first day of fall (Leo Keane, September/October).

GAME/HUNTING

Oiling the Gate Latches—Hunters should build relationships with landowners well in advance of opening day (Alan Charles, July/August).

Catchall—"HIP" Program to Begin this Fall—A new national survey will allow the U.S. Fish and Wildlife Service to more accurately estimate numbers of migratory birds harvested (William Phippen, July/August).

Grouse of a Different Color—Montana's ruffed grouse may be less sophisticated than their eastern cousins, but they're quick learners (Dave Carty, September/October).

Hunting on Horseback: Romance versus Reality—A hunting trip with horses is always an adventure (Alan Charles, September/October).

Keeping the Faith—The Montana Bowhunter Education Course provides safety training and stresses personal responsibility (John Fraley and Tim Pool, September/October).

Our Point of View—An advisory committee will explore a "preference" system to improve the odds of long-time applicants in Montana's big game drawings (Patrick J. Graham, September/October).

From the Field—Clinics Help Waterfowlers Learn Shooting Skills—FWP-sponsored seminars help hunters learn proper shotgunning techniques and distance estimation skills (Paul F. Vang, September/October).

GENERAL

Special Photo Issue (January/February).

Our Point of View—Montana's outdoor traditions are kept strong by many Montanans who share their time and talents (Patrick J. Graham, March April).

And Five Makes a Handful!—Joe Thornbrugh's rendition of two gadwalls on a prairie pond won first place in the 1998 state waterfowl stamp competition (William Phippen, March/April).

1997 Annual Report—A summary of FWP goals and priorities, project highlights and a budget breakdown (March/April).

Catchall—Looking Within to Become a Woman Outdoors—Fun and the chance to learn outdoor skills motivate women to attend FWP's "Becoming an Outdoors Woman" workshop.

Rock Creek: A Conservation Success Story—The Rock Creek Trust

and its many partners are working to protect this blue-ribbon trout stream (Ellen Knight, May/June).

Catchall—Glacier Institute: The First Fifteen Years—A Glacier National Park-based educational institution celebrates its fifteenth birthday (Rima Nickell, May/June).

Autumn Changes—The third week in September is an exciting time for hunters, anglers, hikers, photographers, and leaf watchers (Bruce Auchly, September/October).

Catchall—Dale Tash: A Sportsman's Advocate—Montana Fish, Wildlife & Parks Commissioner Dale Tash died on June 25.

Catchall—Orville Lewis Remember—Long-time FWP warden and administator Orville Lewis passed away in December of 1997 (Vern Craig, September/October).

Catchall—TIP-MONT: Make the Call—FWP's law enforcement hotline increases the number of eyes and ears in the field (Steve Andersen, September/October).

Call of the Wild—Through ethics and education, Montanans are helping to continue the heritage of trapping in our state (John Fraley, November/December).

In the Footsteps of the Mountain Men—Like their nineteenth century counterparts, modern-day trappers seek freedom and adventure (Jim Williams and Greg Muich, November/December).

Catchall—Tim Mulligan Named New FWP Commissioner—A Whitehall resident is appointed by Governor Racicot to fill the term of the late Dale Tash (November/December).

Catchall—The Last of a Generation—Until his death in 1998, Plentywood resident John Cook was the oldest living Montana game warden (Lee Anderson, November/December).

Catchall—Randy Wuertz Receives Enforcement Award—A Gardiner game warden garnered the prestigious Shikar-Safari Club International's Wildlife Officer of the Year award for 1997 (Bernie Kuntz, November/December).

Our Point of View—FWP staff are called on to address an array of wildlife/human problems (Patrick J. Graham, November/December).

PARKS/DEPARTMENT LANDS

Landscape of Change—Makoshika State Park features geology, dinosaurs, and wildlife (Chris Lorentz, May/June).

A Blend of Past and Present—The new Lewis and Clark Interpretive Center will bring thousands of visitors to Giant Springs Heritage State Park (Bruch Auchly, July/August).

Lands Legacy—New Life for Old Ways in the Booming Bitterroot—Three conservation easements protect wildlife habitat—and traditional land uses—adjacent to the Threemile Wildlife Management Area (Mike Thompson, July/August).

Catchall—Vandalism in State Parks: A Never-Ending Problem—The costs of vandalism erode park budgets and necessitate restrictions on use (Bruce Auchly, July/August).

Posters Celebrate State Parks—Winners of the State Parks Poster Contest for fifth-grade students are announced (July/August).

WILDLIFE

Incredible Journeys—Animals rely on a host of built-in navigation systems to get them where they're going and back again (Sam Curtis, March/April).

A Wildlife Viewing Tour Guide: Madison and Gallatin Rivers—This 200-mile highway loop through southwestern Montana provides spectacular wildlife viewing and world-class flyfishing (Deborah Richie, March/April).

Perspectives—The Dairy Queen Bear—A big male grizzly with a taste for apples and a shy disposition may be the bear of the future (Roland Cheek, March/April).

A Wildlife Viewing Tour Guide: Rocky Mountain Front—From snow geese to grizzly bears, the East Front offers a wealth of wildlife attractions (Deborah Richie, May/June).

Perspectives—Bad News Bears—Black bear cubs emerge from their den with a leg up on survival (photography by Donald M. Jones, May/June).

A Wildlife Viewing Tour Guide: The Big Hole—This southwestern Montana auto tour loop offers a combination of wildlife, scenery, history, and trout angling (Deborah Richie, July/August).

Catchall—Partners with Wildlife—Helena elementary schools "adopt" and study several Montana wildlife species (Amy Teegarden, July/August).

Our Point of View—Restoring native species preserves a connection to our past and shows that our world is still habitable despite the pressures of progress (Patrick J. Graham, July/August).

Antlers and Horns—Montana's big game animals sport an amazing array of headgear (Sam Curtis, September/October).

Sentries in the Clouds—With a little help from man, mountain goats are prospering in island ranges east of the Continental Divide (Bruce Auchly, November/December).

Forest Sentinels—Noisy and ever vigilant, red squirrels are among the busiest denizens of the forest (Deborah Richie, November/December).

Bear Busters—Biologists are using Karelian bear dogs to teach problem bears lessons that may save their lives (Christine Paige, November/December).

OREGON BOWHUNTERS ARE KEEPING THE FAITH

As a subscriber and a bowhunter, I wish to compliment you on the outstanding article on bowhunter education that was printed in the September/October issue I just received. My wife and I have been teaching the IBEP for nearly 20 years and really appreciated the exposure you gave bowhunting and bowhunting education. The very positive light in which you presented the sport, so artfully written by John Fraley and Tim Pool, is a big plus for all us bowhunters.

You are aware, of course, that Oregon does not have mandatory bowhunter education yet—but we're keeping the faith so to speak—and it is so rewarding to teach all who avail themselves of it. We get a lot of youngsters, but have had students who were into their 60's as well, and cater to the ladies, too.

I am particularly impressed by the wrinkle used by Pat and Roger Allick—that is the issuance of the manuals and other material before the students come to class for the first time. They, and Cherrie and Mel Kieninger, think like we do and try to emphasize the importance of ethics, responsibility, and good sportsmanship for all bowhunters. I don't think that any other hunting sport lives so much in a fish bowl as we bowhunters do.

Both of us belong to the NFAA and the Oregon Bow Hunters (going on 40 years for me) and we welcome the opportunity to give back to the sport of bowhunting what we can to balance the wonderful experiences we've enjoyed pursuing it. No other sport offers the opportunity to build individual powers of observation and senses like bowhunting does.

Just reading the article was inspiring to us. Oregon, someday, will have mandatory education but it takes my breath away to read of the 500 instructors available and the 2,700 students they certify. Friend Bill Wadsworth must really be beaming up there in the Happy Hunting Grounds.

Again, thank you for *Montana Outdoors* and the superb articles and photos, and especially your great job on bowhunter education. All bowhunting owes you one.—*C.R. (Dick) Bonney and Emily, Grants Pass, Oregon*

SUE-HAPPY SOCIETY A FALLACY

As an outdoor enthusiast I eagerly await the arrival of your magazine. Your articles are informative and the photographs second to none.

Since I so enjoy your publication I was greatly disappointed to read the remark in Alan Charles' article "Oiling the Gate Latches" about a "sue happy society" (July/August). As a practicing attorney for over 20 years, I know firsthand the fallacy of that statement. Whether it be ranchers in a dispute with their neighbors over boundary lines or easements or individuals injured in automobile accidents, I find that each and every one would rather resolve their dispute other than through a lawsuit. They only end up in my office after trying but failing to resolve their dispute in any other manner.

I would suggest that after this your publication omit such gratuitous comments about our legal system and leave those discussions to a more appropriate forum. You will be doing yourself and your readers a service if you stick with what you know. —*Howard F. Strause, Great Falls*

REMEMBER RANCHERS AND FARMERS

I would like to see some articles on the predator issues. It is common knowledge in the ag production field the havoc and financial loss coyotes, mountain lions, wolves, etc. cause to domestic livestock and to wildlife.

It seems to me your magazine sidesteps and if anything takes too much of the "Disney" approach on many of the important issues facing Montana.

Also, I would like to see an article on how outside money is buying up much of Montana. To me that is one of the greatest challenges for us native Montanans, how to survive when wealthy people can come in and pay double for land compared to what ag producers are able to.

You publish a real nice magazine, but remember that ranchers and farmers support your department in many ways and that our stories need to be told. Thank you.—*Rod Coulter, Brusett*

VANDALISM UPSETTING

Your recent article, "Vandalism in State Parks" (July/August), really upset me, even though I now reside in Colorado. As a Treasure State resident back in the 50s, I seldom saw incidents as you described—latrines full of bullet holes, etc. It just goes to show, every state as its scum-bags and morons. —*Neil Cantwell, Grand Junction, Colorado*

THE HORSES TRAVELED ALONE

Enclosed is my check for three *Montana Outdoors* binders. I thoroughly enjoyed this year's photo issue (January/February)—both the wonderful photos and the text.

I have a friend in Butte who can relate to this month's article, "Hunting on Horseback" (September/October). The horses traveled on their own and met the hunters back at the trailhead! —*Wayne Knipping, Gilford, New Hampshire*

MONTANA OUTDOORS

MARKET

Henley

This preshrunk, 100% cotton, long-sleeve shirt can be worn alone or as a base for layering. Available in *natural, leaf,* and *lake (shown),* with embroidered mule deer, in sizes M, L, XL. **ITEM #1301-6 $29.95**

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Generously cut for comfort, this 100% cotton shirt has button-down collar and embroidered trout and fly design. *Blue* denim shirt in sizes S, M, L, XL. *Natural* denim shirt (*shown*) in sizes M, L, XL (sorry, small not available in *natural* denim).
ITEM #1901-4 $39.95

blue *natural*

Golf Shirt

With contrasting collar, cuffs, and placket, this 100% combed cotton pique golf shirt is available in *forest green/wine/navy*; *wine/forest/navy (shown)*; and *jade/concord/royal.* Comes with embroidered Montana Outdoors logo; available in sizes M, L, XL.
ITEM #1202-1 $36.95

forest green/wine/navy *wine/forest/navy* *jade/concord/royal*

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dark green/khaki *dark caramel/dark green*

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Golf-Style Cap

Poly/cotton twill with embroidered mule deer and matching braid; has adjustable fabric strap with sliding zipper. Available in *dark green, black,* or *royal.*

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CONTRIBUTORS

Although mountain goats are native to the Rocky Mountain spine, it's doubtful they were indigenous to the "island" mountain ranges rising from the prairie east of the Continental Divide. But thanks to numerous transplants conducted between 1905 and 1980, says **BRUCE AUCHLY**, the white rock climbers now inhabit several central Montana ranges, including the Crazies, Highwoods, and Snowies. To learn more about the population dynamics of these introduced herds and the hunting opportunities they provide, turn to "Sentries in the Clouds" on page 2. Auchly is FWP's information officer headquartered in Great Falls.

Four kinds of tree squirrels call Montana home, including the native flying squirrel and the introduced fox and gray squirrels. But the red squirrel, or pine squirrel, is by far the most visible—and audible—across Montana forests in any season. As **DEBORAH RICHIE** asserts, "Anyone, man or beast, entering its territory is in for an angry scolding. This noisy chatter translates to an unrelenting message—'no trespassing!'" The behavioral adaptations of these agile tree dwellers and their creative food-gathering techniques make for fascinating reading (p. 8). A free-lance writer specializing in natural history subjects, Richie operates a communications firm in Missoula.

Fraley family

Despite increases in human population, loss of furbearer habitat, and volatile fur markets, trapping remains a popular activity in Montana. The reason, says **JOHN FRALEY**, lies rooted in tradition: "Most trappers in Montana today don't find it necessary to trap for economic reasons. But many of them seek the same sense of wildness and freedom that drew the early trappers to Montana." In his article beginning on page 13, he looks at the status of trapping and profiles five Montana men and women drawn irresistibly to the "Call of the Wild." Fraley, an avid trapper, is FWP's information officer in Kalispell.

Muich

Williams

According to **JIM WILLIAMS** and **GREG MUICH**, modern-day trappers are following in the footsteps of the adventurous souls who trapped for the Hudson's Bay and American Fur companies in the early 1800s. The bustling fur trade led to establishment of a series of forts on the Missouri River—Fort Union, Fort McKenzie, and Fort Lewis, eventually renamed Fort Benton in honor of Senator Thomas Hart Benton. Their article, "In the Footsteps of the Mountain Men" (p. 20), recounts the colorful history of trapping in Montana and describes the existing fur industry. Williams is a wildlife biologist at FWP's regional office in Great Falls; Muich is an avid trapper, history buff, and Lewis and Clark Honor Guard member who works as a fur buyer for Pacific Steel and Recycling in Great Falls.

As more and more people move into bear habitat, bears and people inevitably come into conflict. Relocating problem bears doesn't always work, since they often tangle with the local bruins or hightail it back to the area where they got in trouble in the first place. Beginning on page 24, **CHRISTINE PAIGE** describes an innovative program called "Partners in Life" that uses aversive conditioning to deter bears from future encounters with people. It also involves educating campers and rural residents about proper food storage techniques. After bears are hazed with a special breed of dogs called Karelians, stung with rubber bullets, and frightened with firecracker shells, fewer of them become repeat offenders. Paige is a free-lance writer living in Missoula.

MO thanks to following photographers and organizations for their contributions to this issue: **TIM CHRISTIE**, Coeur d' Alene, ID; **DIANE ENSIGN**, Bozeman; **GENE FISCHER**, **JOHN LAMBING**, **JIM MCLUCAS**, and **MONTANA HISTORICAL SOCIETY**, **HELENA**; **JOHN R. FORD**, Land O Lakes, WI; **MICHAEL & PATSY FRIBLEY**, Big Timber; **JIM HUESTESS**, Puyallup, WA; **DONALD M. JONES**, Troy; **GARY KRAMER**, Willows, CA; **RICHARD MOUSEL** and **ALAN G. NELSON**, Great Falls; **PARTNERS IN LIFE**, Missoula; **JEFFREY RICH**, Millville, CA; **CONRAD ROWE**, Seeley Lake; **RON SPOMER**, Bloomington, IN; **TOM J. ULRICH**, West Glacier; and **JAN L. WASSINK**, Kalispell. Thanks also to the following employees who work for the department: **JOHN FRALEY**, Kalispell; **RICH FURBER**, Glasgow; **TIM MANLEY**, Columbia Falls; and **ADAM RAHMLOW**, Roundup.

Happy
Holidays